

allocating a unique one of the plurality of mutually orthogonal codes to each of a plurality of downlinks, wherein each downlink communicates information between the base station and a separate one of the plurality of mobile stations and all of the uplinks and downlinks share the same carrier frequency;

transmitting, from each of the plurality of mobile stations to the base station, first information and an identifier of the allocated code for the corresponding uplink; and

transmitting, from the base station to each of the plurality of mobile stations, second information and an identifier of the allocated code for the corresponding downlink, wherein

the base station determines the content of the first information, communicated by each of the plurality of mobile stations, after multiplying the respective first information received by the base station by the unique code indicated by the identifier communicated within the corresponding uplink, and

the plurality of uplinks may be distinguished from the plurality of downlinks by the identifier of the respectively allocated unique codes.

16. (New) The mobile communication method of claim 15, wherein the first and second information are transmitted by spreading and received by despreading.

17. (New) The mobile communication method of claim 16, wherein the plurality of uplinks and the plurality of downlinks share a common channel.

18. (New) The mobile communication method of claim 15, wherein the number of uplinks equals the number of downlinks.

19. (New) A duplexing method, comprising:

designating N unique codes to indicate either a forward direction communication or a reverse direction communication, each unique code having an orthogonal property;

combining, for each of a plurality of first devices, an identifier of a particular designated unique code with information to be communicated between the first device and a second device;

communicating, for each of the plurality of first devices, the combined identifier and information between the first device and the second device; and

determining the respective content of the received information, for each of the plurality of first devices, by multiplying the received information with the particular unique code indicated by the identifier combined with the corresponding information.

20. (New) The duplexing method of claim 19, wherein the information is transmitted by spreading and received by despreading.

21. (New) The duplexing method of claim 20, wherein the combined identifier and information, for each of the plurality of first devices, is communicated through one channel.

22. (New) The duplexing method of claim 19, wherein the number of codes designated to indicate a forward direction communication equals the number of codes designated to indicate a reverse direction communication.

23. (New) A mobile communication system, comprising:

a base station having at least one forward data stream and at least one reverse data stream, wherein each forward data stream comprises forward information and an identifier of a unique code, each reverse data stream comprises reverse information and an identifier of a unique code, and each of the identifiers indicates to the base station whether the associated data stream is a forward data stream or a reverse data stream; and

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a mobile station having the at least one forward data stream and the at least one reverse data stream, wherein the identifier within each forward data stream and each reverse data stream indicates to the mobile station whether the associated data stream is the forward data stream or the reverse data stream, wherein at least one of:

(1) the base station determines the content of the reverse information, communicated within each reverse data stream, by multiplying the respective reverse information with the unique code indicated by the corresponding identifier within the reverse data stream, and

(2) the mobile station determines the content of the forward information, communicated within each forward data stream, by multiplying the respective forward information with the unique code indicated by the corresponding identifier within the forward data stream.

24. (New) The mobile communication system of claim 23, wherein the base station comprises:

a first receiver that receives the at least one reverse data stream and determines the content of the reverse information; and

a first circulator that distinguishes each data stream as the forward data stream or the reverse data stream based on the unique code corresponding to the data stream, wherein the first circulator communicates the distinguished forward data stream to an antenna for transmission to the mobile station and communicates the distinguished reverse data stream to the first receiver.

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25. (New) The mobile communication system of claim 23, wherein the mobile station comprises:

a second receiver that receives the at least one forward data stream and determines the content of the forward information; and

a second circulator that distinguishes each data stream as the forward data stream or the reverse data stream based on the unique code corresponding to the data stream, wherein the second circulator communicates the distinguished reverse data stream to an antenna for transmission to the base station and communicates the distinguished forward data stream to the second receiver.

26. (New) The mobile communication system of claim 25, wherein the base station further comprises a first converter that combines the forward information and the associated identifier of the unique code for each forward data stream and the mobile station further comprises a second converter that combines the reverse information and the associated identifier of the unique code for each reverse data stream.

27. (New) The mobile communication system of claim 25, wherein each of the forward and reverse data streams are transmitted by spreading and received by despreading.

28. (New) The mobile communication system of claim 25, wherein each of the forward and reverse data streams are transmitted through one channel.--

29. (New) A method of communicating between a plurality of remote stations and a base station, comprising:

allocating a unique one of a plurality of mutually orthogonal codes to each of a plurality of uplinks, wherein each uplink communicates information between a separate one of a plurality of mobile stations and a base station;

allocating a unique one of the plurality of mutually orthogonal codes to each of a plurality of downlinks, wherein each downlink communicates information between the base station and

a separate one of the plurality of mobile stations and all of the uplinks and downlinks share the same carrier frequency;

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and. transmitting, from each of the plurality of mobile stations to the base station, first information and an identifier of the allocated code for the corresponding uplink; and

transmitting, from the base station to each of the plurality of mobile stations, second information and an identifier of the allocated code for the corresponding downlink, wherein the plurality of uplinks and plurality of down links all have the same carrier frequency.
